

REMARKS

Claims 1-7 are pending in this application, of which claim 1 is now amended. No claims are canceled or added. Applicants also effect an amendment to the specification to correct an informality.

The specification stands objected to due to its legibility. In response, applicants submit a replacement copy with improved legibility. Accordingly, withdrawal of the objection to the specification is now requested.

The drawings stand objected to because Figs. 12A-12D, 13, and 14A-14C do not have the label "Prior Art." In response, applicants submit concurrently with the present Amendment a Request for Approval of Drawing Changes with proposed amendments to Figs. 12A-12D, 13, and 14A-14C to each have the label "Prior Art." Approval of the proposed drawing changes and withdrawal of the objection to the drawings is now requested.

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Applicants respectfully traverse this rejection.

The elaboration in the Office Action, page 2, bottom paragraph, indicates that the recitation "2n number of magnetic teeth of the pole tooth pattern" in lines 8-9 of the claim refers to a pole tooth pattern that is part of the "platen." Applicants respond that the recited "pole tooth pattern" in line 9 refers instead to the pole tooth pattern originally recited in line 3 that is part of the "X-axis movable element."

Accordingly, claim 1 does not need an amendment to become definite, but, in order to expedite prosecution, applicants add additional description as shown above. This description emphasizes that the "magnetic teeth of the pole tooth pattern" are part of the "X-axis movable element."

In view of this explanation and the amendment, applicants now solicit the withdrawal of the indefiniteness rejection of claim 1 under 35 U.S.C. § 112, second paragraph.

Claims 1, 2, 6, and 7 stand rejected under 35 U.S.C. § 102(b) as anticipated by Japanese Reference 60-014679. Applicants respectfully submit that this rejection should be withdrawn.

Claim 1, as amended, describes a linear motor that includes an "X-axis movable element having multiple yoke legs." This recitation describes the feature shown, e.g., in applicants' Fig. 2. (X-axis movable member 60X has multiple yoke legs A, A', B, and B'.) Amended claim 1 also specifies that "each yoke leg [has] a pole tooth pattern having a set of at least $2n$ (where n is an integer of 2 or more) pole teeth." This feature can be seen more clearly in applicants' Fig. 3.

Claim 1 further specifies that:

the $2n$ number of pole teeth of the pole tooth pattern of each yoke leg *are arranged staggered* with respect to the pole tooth pattern of another of the yoke legs [*emphasis added*].

Applicants teach this feature, e.g., in Fig. 3. This feature is not taught by Japanese Reference 60-014679, the prior art applied in support of the anticipation rejection. Accordingly, the rejection should now be withdrawn.

Applicants now elaborate further upon the distinctions between the claimed invention and the linear motor disclosed by JP 60-014679. Applicants' linear motor is provided with a platen and an X-axis movable element. The platen has a platen surface formed with a plurality of platen dots arranged in a matrix. The X-axis movable element has a pole tooth pattern of at least $2n$ pole teeth. The teeth are arranged staggered within one dot pitch in the normal direction of the joined surfaces of magnetic sheets.

Additionally, applicants' teeth of the X-axis movable element have spatial phases with respect to adjacent dots in the normal direction of the joined surfaces, and the teeth are shifted by exact increments. This arrangement forms a magnetic circuit for advancing magnetic flux along the sheet edge direction, and magnetic coupling results with the closest dots arranged in the X-axis direction (orthogonal to the sheet edge direction) so that the X-axis movable member moves in the X-axis direction (a so-called "crawling motion"). Because applicants' linear motor may be used, e.g., as an IC test handler, the X-axis movable member must also be able to move in the normal direction of the joined surfaces. Applicants' invention, as defined in claim 1, performs this function.

In contrast, the linear motor described in JP 60-014679 has a stator (platen) 6 having a longitudinal direction as shown in the drawings (and also described on page 8, line 4). Also, stator 6 does not have a surface formed with a plurality of platen dots arranged in a matrix. Therefore, the movable element (moving element 1) can move only in the sheet edge direction and cannot move in the direction orthogonal to the sheet edge direction. The reference does not disclose or suggest the $2n$ number of magnetic teeth of the pole tooth pattern arranged staggered within one dot pitch in the normal direction of the joined surfaces of the magnetic sheets. Because the linear motor described in JP 60-014679 is used in a printer, there is no need for its movable element to move in the normal direction.

In the present invention, however, the X-axis movable element exhibits a "crawling motion" in the direction orthogonal to the sheet edge direction, and this characteristic distinguishes applicants' linear motor from that disclosed by JP 60-014679. For at least this reason, applicants solicit the withdrawal of the anticipation rejection of claim 1.

Rejected claims 2, 6, and 7 depend from claim 1. Accordingly, applicants solicit the withdrawal of the anticipation rejection of those claims also for at least the reason of their dependency.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as obvious over JP 60-014679 in view of an additional reference. Applicants submit that the rejection should be withdrawn.

Claim 3 depends from claim 1, which, as discussed above, should be found allowable over JP 60-014679. Accordingly, claim 3 should also be found allowable.

Applicants acknowledge that claim 3 is rejected as obvious instead of as anticipated. Applicants also acknowledge that the rejection relies in part on an additional reference. However, implicit in the rationale for the obviousness rejection of claim 3 is the anticipation rejection of parent claim 1. Therefore, upon withdrawal of the anticipation rejection of claim 1, the obviousness rejection of dependent claim 3 should also be withdrawn.

Applicants appreciate the indication that claims 4 and 5 would be allowable if claim 4 were rewritten in independent form. However, as indicated above, base claim 1 should now be found allowable, so it should be unnecessary to rewrite claim 4 in independent form to gain its allowance.

In view of the amendments and remarks above, applicants now submit that the entire application is in condition for allowance. Accordingly, a Notice of Allowability is hereby requested. If for any reason it is felt that this application is not now in condition for allowance, the Examiner is invited to contact applicants' undersigned attorney at the telephone number indicated below to arrange for disposition of this case.

As a final matter, applicants refer to the indication on page 1 of the Office Action that included therein is the form PTO-1449 from the February 13, 2002 Information Disclosure Statement (IDS). Apparently, such form was inadvertently mislaid before mailing, because applicants' copy of the Office Action did not include the form. Accordingly, applicants request another copy.

However, instead of sending a copy from the February 13, 2002 submission, applicants provide a new submission as a Supplemental IDS to correct an informality in form PTO-1449 attached thereto. The February 13, 2002 form PTO-1449 inadvertently indicates that an English-language translation of the Abstract of JP 60-014679 was included. Applicants now realize that the translated Abstract does not correspond to the cited reference. Accordingly, the present form PTO-1449 refers to the May 21, 2001 International Search Report to fulfil the requirement of an explanation of the reference's relevance. Applicant request review and return of the present form PTO-1449.

Regarding the amendments, attached hereto is a marked-up version of the amendments to the specification and the claims by the current amendment. The attached page is captioned "Version of Amendments with Markings to Show Changes Made."

09/926,430

In the event that this paper is not timely filed, applicants petition for an appropriate extension of time. The fees for such an extension, or any other fees which may be due, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,
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PATENT TRADEMARK OFFICE

Enclosures: Replacement copy of Specification
Request for Approval of Drawing Changes
Supplemental Information Disclosure Statement
Version of Amendments with Markings to Show Changes Made

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VERSION OF AMENDMENTS WITH MARKINGS TO SHOW CHANGES MADE

SPECIFICATION:

Replace the paragraph beginning on page 5 at line 11 with the following:

To realize a planar linear motor having a movable member which moves planarly in the Y-axis and Y-axial direction using such a Sawyer linear motor, for example, as seen in Japanese Unexamined Patent Publication (Kokai) No. 9-261944, as shown in FIG. 13 and FIG. 14, there are provided a platen 10 formed on the platen surface with square-top platen dots D arranged in a matrix and a composite movable member comprised of X-axis movable members [20] 20X having stripe-shaped projecting pole teeth KA and KA' (KB and KB') parallel to the Y-axis and able to move in only the X-axial direction and Y-axis movable members 20Y having stripe-shaped projecting pole teeth KA and KA' (KB and KB') parallel to the X-axis and able to move in only the Y-axial direction - all connected by a support plate 30 in an in-planar perpendicular relationship.

CLAIMS:

Amend claim 1 as follows:

1. (Amended) A linear motor provided with a platen having a platen surface formed with a plurality of platen dots arranged in a matrix and an X-axis movable element having multiple yoke legs, each yoke leg having [an] a pole tooth pattern having a set of at least $2n$ (where n is an integer of 2 or more) pole teeth for generating an advancing magnetic flux with the closest dots among the platen dots,

said linear motor characterized in that the platen has [the] parallel sheet edge surfaces [of the] as a stacked member comprised of a plurality of magnetic sheets stacked together as the platen surface, the X-axis movable element arranged such that the $2n$ number of magnetic teeth of the pole tooth pattern are arranged laterally in a relation having an equal spatial phase relation held with the closest dots arranged in the sheet edge direction of the magnetic sheets, the $2n$ number of pole teeth of the pole tooth pattern of each yoke leg are arranged staggered with respect to the pole tooth pattern of another of the yoke legs within one dot pitch (P) in the normal direction of the joined surfaces of the magnetic sheets, and the spatial phase held with respect to the closest dot arranged in the normal direction is shifted by increments of the spatial phase difference ($P/2n$).